

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed 8/19/2010 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The changes to [0002], [0088],

There is no support for the simulation being the mathematical model, nor for the terms "desired" and "theoretical" should have any sort of equivalence as indicated in [0002]. Although applicant's can be their own lexicographer, the lexicography must be established in the application as filed. Attempts to apply new definitions after filing is typically considered new matter.

### ***Claim Objections***

Claim 92 is objected to because of the following informalities: claim 92 lacks indents.

#### **From MPEP 608.01 Form of Claims**

Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation, 37 CFR 1.75(i).

There may be plural indentations to further segregate subcombinations or related steps.

Appropriate correction is required.

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The "predicted shape", "predicted light modulating parameters", "structure to be fabricated", "desired structure", the initiating step, the "measured parameters", and the step of applying need antecedent basis in the specification.

As pointed out in **MPEP 608.01(o)**:

Note that examiners should ensure that the terms and phrases used in claims presented late in prosecution of the application (including claims amended via an examiner's amendment) find clear support or antecedent basis in the description so that the meaning of the terms in the claims may be ascertainable by reference to the description, see 37 CFR 1.75(d)(1). If the examiner determines that the claims presented late in prosecution do not comply with 37 CFR 1.75(d)(1), applicant will be required to make appropriate amendment to the description to provide clear support or antecedent basis for the terms appearing in the claims provided no new matter is introduced.

As indicated above, examiner could not find any antecedent basis for the language and any support appears to be very unclear. Thus it is deemed that a prima facie showing has been made of lack of clear support or antecedent basis. The burden is now on applicant to demonstrate clear support or antecedent basis for the claim language.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 79-82, 85-90, 92-96 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 79-82, 85-90, 92-96 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 5/24/2001. In that paper (at page 39, lines 1-4), applicant has stated "the fundamental feature of the invention is the use of both near-field and far-field measurements to control the fabrication of an optical device", and this statement indicates that the invention is different from what is defined in the claim(s) because the claims do not require any measuring step or controlling step or any fabricating step. Examiner understands that claim 79 refers to 'measured parameters' and 'initiating' fabrication, but these do not appear to be that which applicant argues as being fundamental.

Examiner finds the use of "and/or" at claim 79, line 1, indefinite as to what is required. It is noted that the term "and/or" typically means "and" or "or" in many areas. However, in patent claim construction, the term "or" almost always means "and" or "or". Thus it is unclear what applicant intends to be meant by including "and/" to the word "or". This also applies to the "and/or" of claims 88 and 82.

There is confusing antecedent basis for "the structure" – it could be the structure of the preamble or the "structure to be fabricated" or the "desired structure".

Claim 80 is indefinite as to whether it requires a step of fabricating or if is optional. Claim 79 merely refers to initiating fabricating - but no actual fabrication of the structure is recited.

Claim 85: there is no antecedent basis for "the step of fabrication of the structure".

Claim 85: there is no antecedent basis for "the predicted shape of the protrusion" – it makes it unclear if it implies that claim 79 was intended to require that the model is a model of protrusion structure.

Claim 86: it is unclear if this fabricating is one of the previously mentioned fabricating steps, or if it is intended to be a fabrication step of the fiber before the other fabricating steps. Or if it is intended to be a product-by-process type limitation to describe what the initial fiber starts as.

Claim 87 – it is unclear if the fabricating is directed to one of the required fabricating steps - or if it merely serves to identify that the term "fabricating" includes/encompasses a step of forming a lens.

Claim 88 there is no antecedent basis for "the...lens". Claim 85 merely recited the purpose of "to form a lens". Thus it is unclear whether such means claims 85 requires a lens. As a comparison, "Mr. Smith bought a bucket of paint to paint his barn" is indeterminate as to whether his barn was ever painted. Likewise claim 85 is (literally) indeterminate as to whether a lens was created. Most noteworthy: claim 88 uses " fiber and/or lens" which indicates one can coat the lens without coating the fiber - which suggests that the lens is not part of the fiber - suggestive of a lens that is attached to the

surface of the protrusion. And if one should interpret claim 85 as requiring the result of the intention "to form a lens" it is unclear whether every other intended use-type limitation of the claims should also be interpreted so narrowly. It is unclear what is meant by "selectively" coating. It makes it unclear if such excludes an automated coating method because there is mental selection process involved.

Claim 92 seems confusing to examiner. Providing indents (see the above objection of claim 92) should remove this confusion.

Claim 93: There is no antecedent basis for "the wavelength of light being manipulated." Most light is composed of a whole spectrum of wavelengths.

Claims 79-82, 85-90, and 92-96 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The MPEP sets forth what must be considered to establish whether the enablement requirement is met.

#### **2164.01(a) Undue Experimentation Factors**

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;

- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

**(A) The breadth of the claims;**

The first step of claim 79 requires: "providing a mathematical model..." [0002] has been amended to indicate that this includes a theoretical simulation. This is rather broad and encompasses any theory and any simulation which uses this theory. Thus the claims have a scope beyond generally accepted physics.

**(B) The nature of the invention;**

The nature of the invention appears to be extremely complex in nature. Examiner notes [0117] which discusses measuring an atomic force. There is not even an indication of which force (EM force, strong force, weak force or gravitational). Since the invention relies on an unspecified theory- it could relate to a theorized fifth fundamental force of the universe.

**(C) The state of the prior art;**

The state of the prior art is much below the present invention. Methods of making optical fibers in class 65, generally just involve inorganic chemistry, heat transfer and other non-high-level physics/chemistry.

**(D) The level of one of ordinary skill;**

As indicated in (C) above, one of ordinary skill in the art is primarily skilled in well accepted physics and chemistry. One of ordinary skill generally has little/no experience in new theories or atomic forces.

**(E) The level of predictability in the art;**

The level of predictability in the art is high, however given the possibility of a new theory - the predictability may be low.

**(F) The amount of direction provided by the inventor;**

Although direction is provided relating to the actual physical fabrication, there is no guidance relating to the providing of a mathematical model of a theoretical structure, nor is there guidance relating to the theoretical simulation as previously claimed and presently disclosed. According to Examiner's dictionary, a theory is "a plausible or scientifically acceptable general principle or body of principles offered to explain phenomena." As per [0042] of the specification, applicant uses a theory, which appears to be "not available previously. However the inventor does not disclose the general principle (or body of principles) nor even the phenomena that such explains. Nor is there any hints or guidance as to what the new theory might be. [0086] confirms that applicant wishes to cover "other theories to be achieved".

**(G) The existence of working examples; and**

There is no working examples of the invention – for example any example of providing of a theoretical simulation or mathematical model.

**(H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.**

The amount of experimentation can accurately be considered limitless because it encompasses any theoretical simulation - including those based on theories outside generally accepted theories and laws of science.

Looking to all the factors above, Examiner finds that one of ordinary skill would not be able to make or use the present invention, because creating and using a new theory is beyond the skill level of one of ordinary skill - in particular where there is no indication of the new theory used, or the simulation used by it.

Or, to the extent of that the theory is indicated in the specification, there would be a scope of enablement issue, because the specification does not reasonably provide enablement for any other theory. The claims are of a scope that encompass any theory - including those not yet invented. Inventors generally cannot get patent protection based on theories that are yet made; the purpose of the patent system is promote innovation. It would be counter productive to grant patents based on a hunch that a theory might be discovered in the future. See also the last sentence of page 29 where applicant intends the invention to be used in all areas of optics.



Examiner notes other aspects also appear to lacking in enablement. For example the plural layers on the lens with nanoindentation (claim 90). There is no guidance as to the size/shape of the lens, the thickness of the layers or the number of layers - or the nanoindentation. Nanoindentation is used to measure strength/hardness of materials. There would be an undue amount of experimentation required to make an use this method to determine the physical parameters of the probe.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 79-82, 85-90, 92-96, rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

There is no support for the step of "providing a mathematical model of a predicted shape and of predicted light modulating parameters" of claim 79. Nor for the subsequent steps that refer to the model.

Claim 79 at lines 6-7 refers to the "a light emitting surface of the desired structure". One would understand that this is not in existence, since it is merely 'desired'. But lines 9-10 refers to using profiling of this emitting surface. There is no

support for profiling a desired structure/surface. There appears to only be support for profiling actual surfaces of a tangible object.

### ***Response to Arguments***

Applicant's arguments filed 5/24/2010 have been fully considered but they are not persuasive.

The arguments refer to an objection relating to the invention being complex. This is incorrect, there is no such objection. The discussion of the appearance of extreme complexity was merely one part (of many) of the analysis set forth in the non-enablement rejection. As indicated in MPEP 2164.01(a) examiner is required to consider the nature of applicant's invention – it was not an objection/rejection by itself.

Regarding factor A of the non-enablement rejection: It is argued that the claims no longer recite "theoretical simulation" and the current language is supported in the specification as filed. This is true but does not appear to be very relevant. Applicant does not dispute the Office's finding that the claims have a scope beyond generally accepted physics. Although the narrowing to mathematical models no longer encompasses creatures from outer space, the claims still have a scope that extends beyond generally accepted physics/math, because the specification refers to theories not yet developed and thus would apply to mathematics not yet developed.

Regarding factor B of the non-enablement rejection: it is argued that the invention is "quite simple". However this appears to be merely a conclusion. Applicant does not dispute the rationale given in the rejection or pointed out any specific error.

Examiner has also considered the discussion on page 39 of the response: The fact that applicant disclose that the theory/model is 'based on' the exacton field calculations, the Helmholtz wave equation, etc. does not appear to be very relevant. Just because a theory has basis in conventional features, does not mean the theory also excludes complex or questionable features. For example, Lobachevskian geometry is based on the first four postulates of Euclidian geometry (rather simple), but it adds a 5th postulate that goes beyond Euclidian geometry and results in a theory that extremely complex. The fact that applicant uses some simple portions of the invention/theory in no way demonstrates that all other portions of the invention/theory are also simple. Furthermore the page 39 discussion of fiber optical elements is not persuasive because claim 79 is not so limited. In the specification at [0134] applicant is clear that the invention is directed to "all areas of optics", thus sole example of fiber optics does not appear to be commensurate in scope with what applicant intends the claims to cover.

Regarding factor C of the non-enablement rejection: such is not disputed

Regarding factor D of the non-enablement rejection: It is stated that applicant believes the analysis is incorrect because now theories of operation for devices or methods are the bread and butter of researches in the sciences. This does not appear to be very relevant. The factor relates to the level of one of ordinary skill (in the art of making lenses). Applicant's comments related to "researchers in the sciences" do not appear to be directed to one of ordinary skill in the art of the present field of endeavor.

Regarding factor E of the non-enablement rejection: This is not disputed.

Regarding factor F of the non-enablement rejection: Although the factor was addressed, applicant does not appear to dispute the finding that there is "no guidance relating to the theoretical simulation" as previously claimed, and which is still encompassed by the claims. It is argued that the theory is clearly and specifically spelled out. It appears applicant is only pointing to an emulation of the new theory, but not the theory itself.

Regarding factor G of the non-enablement rejection: Applicant points to the Examiner's analysis of factor F as an admission that there are working examples of the theory. Examiner disagrees, the analysis of factor F only points to physical fabrication, but not the theoretical simulation. The claim requires a theoretical simulation (now claimed as mathematical model). Examiner also notes the claims don't even require a step of fabrication.

Regarding factor H of the non-enablement rejection: Applicant argues that they believe the application is not directed to "any theoretical simulation". However no basis for this is given. [0086] of the specification indicates that the invention should encompass "other theories to be achieved" thus it is reasonable to conclude that applicant intended a scope much broader than any specific theory that might be disclosed or known.

It is argued that rejection confuses breadth with enablement. Examiner refers applicant to page 7 of the 12/22/2009 Office action where Examiner admits that if the theory is indicated in the specification, there would be a scope (i.e. breadth) of enablement issue. Thus even if applicant can demonstrate a theory is enabled, the scope of enablement rejection remains.

Regarding nanoindentation applicant refers to [0076] and [0077]. Examiner fails to see the relevance of these. Applicant does not point to any error in the rationale or conclusion in the Office's discussion.

It is argued that the finding that "and/or" makes the claims indefinite is without basis. Examiner disagrees. The rejection clearly points out why the term is indefinite in the claims. The fact that a term has a definition does not mean it cannot result in an indefinite claim. Applicant does not dispute the rationale/analysis given, only the conclusion.

It is argued that claim 85 does not imply that claim 79 requires a protrusion. However the rejection is based on a question of intention not implication. Claim 85 refers to the "the predicted shape of the protrusion". The only previously mentioned predicted shape is from claim 79 - this suggests the shape of claim 85 is that of claim 79.

It is argued that existence of choice does not exclude automation of a process. However no rationale is given. Automation is very much the opposite of selection or choice. Clearly a potential competitor would expect that he could avoid infringement by using a coating process which does not involve selection - because claim 88 is requires

"selectively" coating. Thus it is reasonable to assume automatic coating would be such a non-selective coating.

### ***Allowable Subject Matter***

Although there is no prior art rejection, such should not be misconstrued as a suggestion of allowable subject matter.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272

1191. The examiner can normally be reached on Monday through Thursday, roughly 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Daniels can be reached at 571-272-xxxx. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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